

Date: Friday, 9/29/2006 10:43:30 AM
User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: 02.250 SUPPORT
Job Number	: 28792		
Estimate Number	: 11057		
P.O. Number	: <i>N/A</i>	Part Number	: D28911
This Issue	: 9/29/2006 S.O. No. : <i>N/A</i>	Drawing Number	: D2891 REV A1
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: <i>N/A</i> Type : PURCHASED PARTS	Drawing Revision	: A1
Previous Run	: 28482	Material	: <i>N/A</i>
Written By	: <i>[Signature]</i>	Due Date	: 10/12/2006
Checked & Approved By	: <i>[Signature]</i>	Qty:	12 Um: Each
Comment	: Est. C 02.11.26 Added P/O KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	PG	PURCHASING
-----	----	------------



Comment: PURCHASING

Issue P/O: *2157**C 206109/29 (12)*

Description: D6104-003

Material: 17-4 PH SS (AMS 5643 OR AISI 630) as per Dwg D6104

Material release note required.

Blank size makes (2) D2891-1

2.0	D6104003	17-4 SS Roundbar 3.25"OD
-----	----------	--------------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 12.0000 Each(s)
Support 2.25 dia

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1

Recieve & Inspect for Transit Damage

Ensure Material Release Note is attached

P 6/10/11 (12)

4.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI LATHE

Turn blank for Haas as per Folio FA046

RC/M8 06/10/14 12

5.0	QC1	INSPECT ALL DIM TO DIM SHEET
-----	-----	------------------------------



Comment: INSPECT ALL DIM TO DIM SHEET

M8 06/10/14 12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: ☒ Date: 02/10/17
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Friday, 9/29/2006 10:43:30 AM
User: *Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 02.250 SUPPORT

Job Number: 28792

Part Number: D28911

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

HAAS1

HAAS CNC VERTICAL MACHINING #1



Comment: HAAS

Machine as per Folio FA046
Tumble & Deburr

J.G / E 06/10/17

7.0

QC2

INSPECT PARTS AS THEY COME OFF MACHINE



Comment: INSPECT PARTS AS THEY COME OFF MACHINE

J.G / E 06/10/17

8.0

QC8

SECOND CHECK



Comment: SECOND CHECK

J.G 06/10/18

9.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.2) as per QSI 005 4.3

YR 06/10/26 X24

10.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

J.B 06/10/26 (24)

11.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: ST/66

J.B 06/10/26 (24)

12.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

J.B 06/10/27

Job Completion



C 206/10/27

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

DART AEROSPACE LTD	Work Order: 28792
Description: Ø2.250 Support	Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

				Recorded Actual Dimensions					
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	By	Date
Lathe Section									
A	2.274	2.279		2.278	2.278	2.278	2.277	M8	06/10/14
B	3.702	3.722		3.704	3.704	3.702	3.706		
C	2.564	2.584		2.574	2.574	2.567	2.574		
D	0.718	0.738		.728	.728	.728	.728		
E	0.090	0.110		.100	.100	.101	.101		
F	2.464	2.484		2.474	2.475	2.469	2.475		
G	2.029	2.049		2.035	2.035	2.034	2.035		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.913	.913	.913	.913		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.099	.100	.094	.100		
L									
HAAS Section									
AA	0.188	0.193	DT8706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.249	0.246	0.251	0.251		
AC	0.115	0.150		0.123	0.124	0.126	0.124		
AD	0.040	0.060		0.047	0.045	0.046	0.045		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.250	0.250	0.250	0.250		
AG	0.290	0.310		0.300	0.303	0.295	0.297		
AH	0.115	0.150		0.134	0.137	0.134	0.137		
AI	0.454	0.474		0.459	0.462	0.462	0.459		
AJ	2.779	2.789		2.784	2.780	2.781	2.780		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.040	1.040	1.041	1.040		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT8883	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.666	1.671	1.667	1.668		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
Accept/Reject									

Measured by: E
Date: 06/10/16

Audited by: [Signature]
Date: 06/10/18

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	[Signature]

DART AEROSPACE LTD	Work Order: 28792
Description: Ø2.250 Support	Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				45	46	47	48		
Lathe Section									
A	2.274	2.279		2.279	2.279	2.279	2.279	MR	06/10/14
B	3.702	3.722		3.705	3.705	3.706	3.705		
C	2.564	2.584		2.575	2.575	2.574	2.574		
D	0.718	0.738		.728	.728	.728	.728		
E	0.090	0.110		.100	.100	.100	.100		
F	2.464	2.484		2.475	2.478	2.476	2.476		
G	2.029	2.049		2.038	2.039	2.039	2.039		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.914	.913	.913	.913		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.100	.100	.100	.100		
L									
HAAS Section									
AA	0.188	0.193	DT8706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.244	0.248	0.247	0.248		
AC	0.115	0.150		0.120	0.125	0.124	0.121		
AD	0.040	0.060		0.051	0.049	0.049	0.049		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.250	0.250	0.250	0.250		
AG	0.290	0.310		0.298	0.297	0.296	0.297		
AH	0.115	0.150		0.134	0.135	0.134	0.134		
AI	0.454	0.474		0.461	0.460	0.461	0.461		
AJ	2.779	2.789		2.781	2.782	2.781	2.781		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.042	1.042	1.041	1.042		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT8883	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.667	1.666	1.667	1.667		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
Accept/Reject									

Measured by: EP / J.G
Date: 06/10/17

Audited by: [Signature]
Date: 06/10/18

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	[Signature]

DART AEROSPACE LTD	Work Order: 28792
Description: Ø2.250 Support	Part Number: D2891-1
Inspection Dwg: D2891 Rev. A1	Page 1 of 1

Inspect dimensions highlighted on inspection sheet drawing D2891 Rev.A1/DSK076 Rev.A and record below:

Dim	Min	Max	Go/No Go Gauge	Recorded Actual Dimensions				By	Date
				19	210	411	412		
Lathe Section									
A	2.274	2.279		2.278	2.279	2.279	2.279	MS	06/10/18
B	3.702	3.722		3.705	3.705	3.705	3.705		
C	2.564	2.584		2.513	2.576	2.576	2.575		
D	0.718	0.738		.728	.727	.728	.728		
E	0.090	0.110		.100	.100	.100	.100		
F	2.464	2.484		2.473	2.475	2.476	2.475		
G	2.029	2.049		2.033	2.033	2.034	2.034		
H	2.964	2.984		2.974	2.974	2.974	2.974		
I	0.913	0.933		.923	.923	.923	.925		
J	0.022	0.042		.032	.032	.032	.032		
K	0.090	0.110		.099	.098	.098	.099		
L									
HAAS Section									
AA	0.188	0.193	DT8706	0.190	0.190	0.190	0.190		
AB	0.240	0.260		0.249	0.249	0.249	0.248		
AC	0.115	0.150		0.120	0.121	0.120	0.121		
AD	0.040	0.060		0.051	0.050	0.051	0.051		
AE	0.010	0.020		0.015	0.015	0.015	0.015		
AF	0.240	0.260		0.249	0.249	0.249	0.249		
AG	0.290	0.310		0.297	0.297	0.296	0.297		
AH	0.115	0.150		0.134	0.134	0.134	0.134		
AI	0.454	0.474		0.461	0.461	0.461	0.460		
AJ	2.779	2.789		2.781	2.780	2.781	2.780		
AK	0.240	0.260		0.250	0.250	0.250	0.250		
AL	1.002	1.042		1.042	1.041	1.041	1.041		
AM	0.053	0.073		0.063	0.063	0.063	0.063		
AN	0.257	0.262	DT8883	0.260	0.260	0.260	0.260		
AO	1.663	1.683		1.666	1.666	1.667	1.667		
AP	0.053	0.073		0.063	0.063	0.063	0.063		
AQ	0.022	0.042		0.032	0.032	0.032	0.032		
AR									
AS									
Accept/Reject									

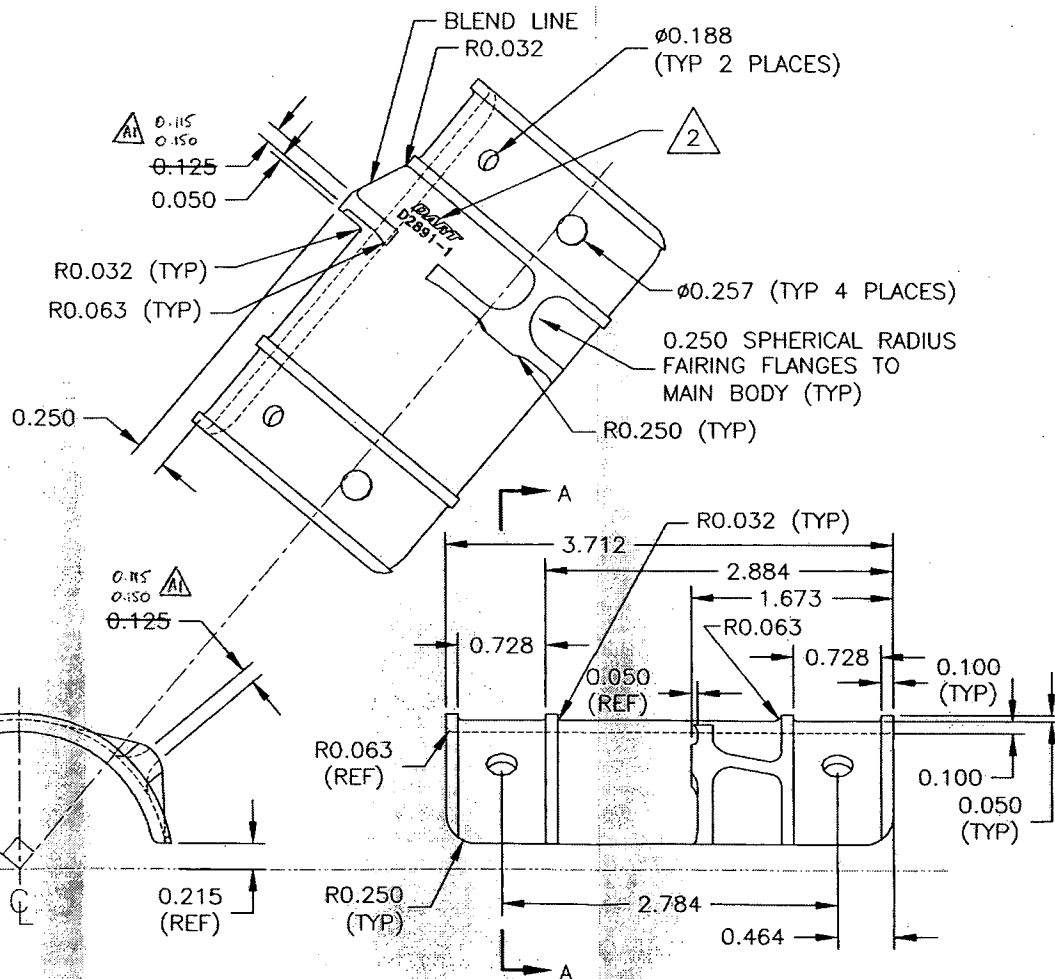
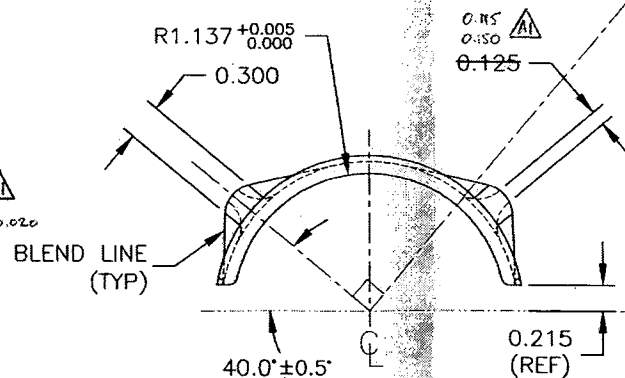
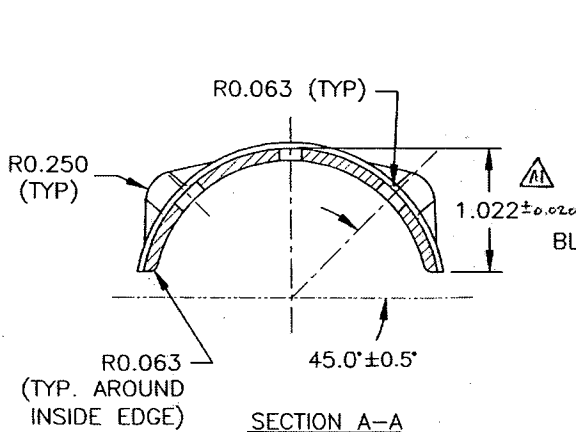
Measured by: J.E
Date: 06/10/17

Audited by: [Signature]
Date: 06/10/18

Rev	Date	Change	Revised by	Approved
A	02.12.12	New Issue	KJ/RF	[Signature]

D2891-1

- 1) MATERIAL: 17-4 PH STAINLESS STEEL
HEAT TREAT TO H900 CONDITION
(900°F FOR 1 HR, AIR COOL)
MIN UTS = 170 KSI (38 HRC)
- 2) IDENTIFY WITH DART LOGO (PER DART SUPPLIED GRAPHIC) AND PART NUMBER IN THIS AREA WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP.
- 3) BREAK ALL UNMARKED SHARP EDGES 0.010 TO 0.020
- 4) PART IS SYMMETRIC ABOUT CENTERLINE
- 5) TOLERANCES ARE PER DART QSI 018 (REF. X.XXX = ± 0.010) UNLESS OTHERWISE NOTED
- 6) ALL DIMENSIONS ARE IN INCHES
- 7) FINISH: POWDER COAT WHITE (REF. 4.3.5.2) PER DART QSI 005 4.3



NO. 28792
WORK ORDER
SUBJECT TO AMENDMENT
WITHOUT NOTICE
ENGINEERING
RETURN TO
SHOP COPY

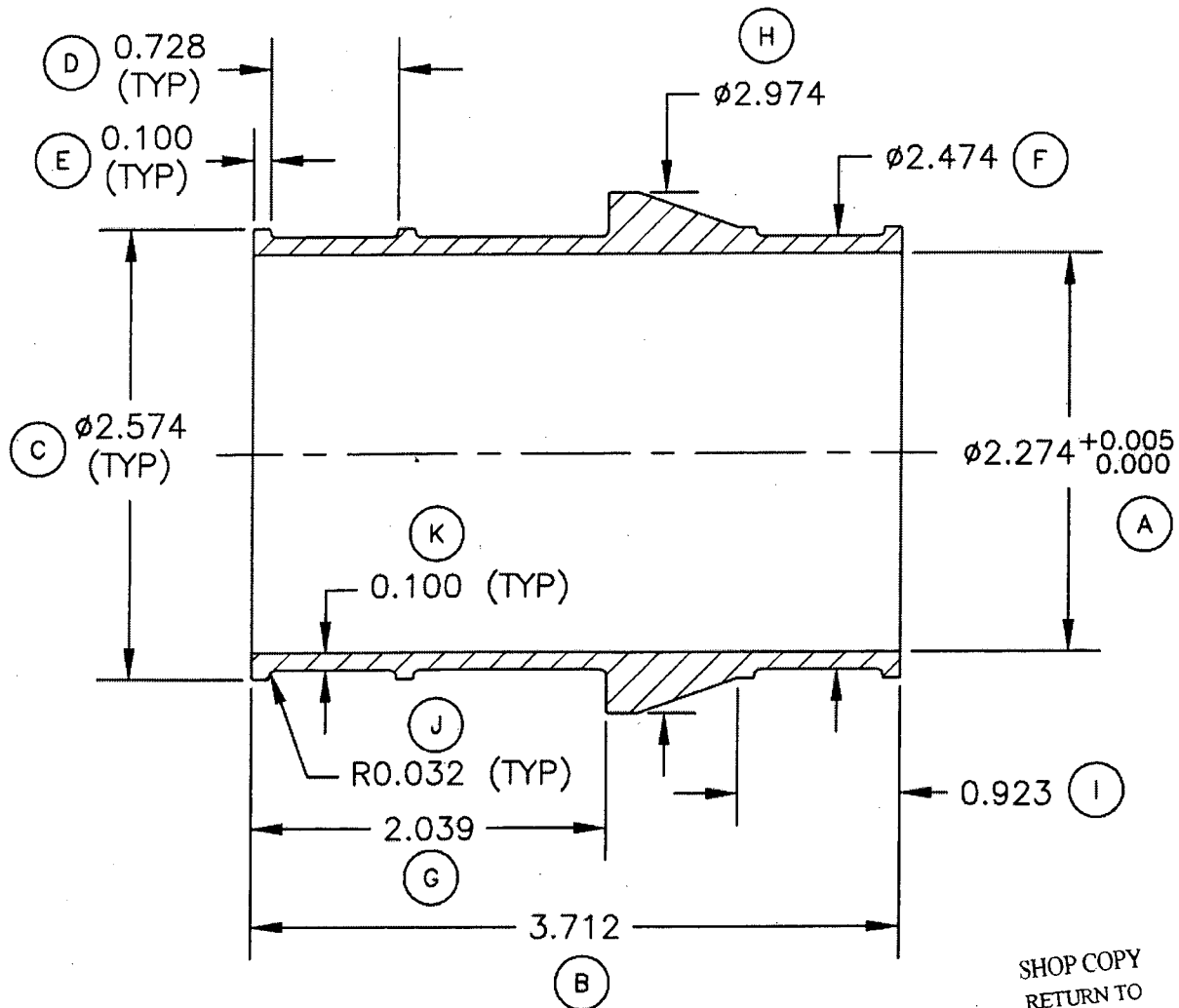
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A1	IP 02-01-23	UPDATE DIMS AS MANUFACTURED.
A	00.11.17	NEW ISSUE
DESIGN	CP	DART DART AEROSPACE LTD. HAMMERSLEY, ONTARIO, CANADA
CHECKED	APPROVED	DRAWING NO. D2891
DATE	00.11.17	TITLE: #2.250 SUPPORT
		REV. A SHEET 1 OF 1 SCALE 1:1



DESIGN RT	DRAWN BY RT	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED CH	APPROVED CH	DRAWING NO. DSK 076	REV. A SHEET 1 OF 1
DATE 03.05.20		TITLE TURNING DETAIL FOR D2891-1	SCALE 1:1
A	03.05.20	NEW ISSUE	

RELEASED
03.07.01 CH



D2891-1 TURNING DETAIL

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 28792

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Ship Date 10Oct06 at 13:02 From PFW
Probill T134433
Via APEX FORWARDING
FOB CONCORD
Frt PREPAID

Route 0-3-0 Manifest
Vehle Trailer
S/A MARIO CARREIRO
S/N 20115

Consigned to: DART AEROSPACE
1270 ABERDEEN ST
HAUKESBURY, ON K6A 1K7

Tell: 905 882 9444 Fax: 905 882 9444

BILL OF LADING

1) Our Order PED-733675- 1 Your PO # P000002157
STAINLESS STEEL ROUND BAR 17-4 CF
3.25" DIA X 3.8000"
MARK CUST PART NO.: D4104-0003 ON PACKAGE

10/10/11

Heat Number	Tag No	Quantity	PCS	Wt LBS
A17799	940100	3	12	109

Tags	Pcs	Wt LBS
TOTAL: 1	12	109

Heat Number A17799 *** Chemical Analysis ***

TOTAL 1 BOX 140 LBS.

CUSTOMER PICK-UP HRS AT PECKOVER'S, CONCORD, ONT.
*** 9:00 AM TO 4:00 PM ***
PLEASE NOTE OUR NEW GST # 140223784
EFFECTIVE MARCH 20, 2006.



ALUMINUM • BRASS • COPPER • PLASTICS

Page: 1 Last

ERRORS OR SHORTAGE MUST BE REPORTED IMMEDIATELY.
MERCHANDISE MAY NOT BE RETURNED WITHOUT OUR APPROVAL NO

RECEIVED IN GOOD CONDITION

DATE

GST # R892947458

**VPK METAL
DART AEROSPACE**STAINLESS STEEL ROUND BAR 17-4 CF
1.25" DIA X 3.500"
PART NO.

FORM P00002157

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.**Certificate of Mill Test Results**

HL REC 430341-001 1006406

Pg 1/1

SP 405, 50-A

P.O. BOX 577
SYRACUSE
NEW YORK 13201**CERTIFICATE OF TEST**COPPER & BRASS SALES INC
ATTN: ACCOUNTS PAYABLE
22305 WEST ELEVEN MILE RD
SOUTHFIELD MI 48034COPPER & BRASS SALES
6335 E. DAVISON
DETROIT, MICHIGAN
48212-1499OUR ORDER NO.
PO-12987-6-1DATE
08/09/04CUSTOMER ORDER # & DATE
CK4179

CUSTOMER REF. #

DISTRICT

B PARSONS

SHIPPED
FROM

SYRACUSE

DESCRIPTION OF MATERIAL

CRU 17CR-4NI T&B ANN (P/H 408406-7)
ASTM-A364-04 TYPE 430 AMS-56430 AMS-2303E
DRAB 252.225.7014 & 225.7002-3 (B)(1) COMPLIANT

SIZE

3.250 RD

HEAT NO

CHEMICAL ANALYSIS

HEAT NO	C	MN	P	S	SI	NI	CR	MO	CU	CS	TA
A17799	.041	.55	.027	.020	.55	4.30	15.40	.050	3.16	.25	.007

QUANTITY

HEAT NO.

MECHANICAL PROPERTIES

1835 & A17799

TENSILE PSI YLD.2XPSI 2XNONB4D RED/AREA2

HARDNESS
BHN 355CAPABILITY PHYSICALS AFTER 900 DEG. F. - 1 HR. 61500140-03-06
177.990 175.630MACRO TEST OK
FERRITE 5 %
HAGNAFLUX F/S = 0/0

Date 1	53.3	BHN 355
Cust.	Peckover	
W/O #	729279	
Qty	109 Pcs.	
<input type="checkbox"/> Size	<input checked="" type="checkbox"/> Special Instructions	
<input type="checkbox"/> Part #	<input checked="" type="checkbox"/> Alloy <input checked="" type="checkbox"/> Heat/Lot	

These test reports are for material shipped

DATE 08/09/04
COPPER & BRASS SALES

PO 104-003 ATT: QA

MATERIAL FREE FROM MERCURY CONTAMINATION AT TIME OF SHIPMENT
NO WELD REPAIR PERFORMED
MATERIAL MELTED IN U.S.A.THANK YOU FOR SELECTING A QUALITY PRODUCT
MANUFACTURED BY THE EMPLOYEES OF CRUCIBLE SPECIALTY METALS IN

SWORN TO AND SUBSCRIBED BEFORE ME THIS

DAY OF _____, 20

NOTARY PUBLIC

JOHN H. FERRARI

CERTIFIED
BY

QUALITY ASSURANCE REPRESENTATIVE

MANAGER OF QUALITY ASSURANCE